

**CLAIMS**

What is claimed is:

1. A lamp comprising:  
an anode oriented substantially towards a cathode in an  
5 envelope;  
a baffle in the envelope located between the anode and the  
cathode, the baffle having an aperture; and  
an electrical insulator having a first surface connected to a  
first surface of the baffle and a second surface of the electrical insulator connected  
10 to a first surface of the anode, the electrical insulator having a transverse cavity  
extending from a first through-hole in the first surface of the electrical insulator to  
a second through-hole in the second surface of the electrical insulator, the  
electrical insulator having a gap in the transverse cavity.
- 15 2. The lamp as set forth in claim 1 wherein the gap is located  
adjacent the second through-hole in the electrical insulator.
3. The lamp as set forth in claim 1 wherein the gap is spaced  
in from the first and second through-holes in the electrical insulator.
- 20 4. The lamp as set forth in claim 1 wherein the gap extends  
substantially around the transverse cavity.
5. The lamp as set forth in claim 1 wherein the anode is  
25 connected to a radiator.
6. The lamp as set forth in claim 1 wherein the cathode is  
substantially coated with an electron emitting material.
- 30 7. The lamp as set forth in claim 1 wherein the electrical  
insulator comprises a ceramic material.

8. The lamp as set forth in claim 1 further comprising a cathode shield substantially covering the cathode, the cathode shield connected to a light emitting assembly at a window shield portion and made of a Nickel material.

9. The lamp as set forth in claim 1 further comprising an anode shield substantially covering the anode, the anode shield connected to a light emitting assembly at a support bracket portion and made of a Nickel material.

10. A lamp comprising:  
an anode oriented substantially towards a cathode in an envelope;  
a baffle in the envelope located between the anode and the cathode, the baffle having an aperture;  
a first electrical insulator having a first surface connected to a first surface of the baffle, the first electrical insulator having a first transverse cavity extending from a first through-hole in the first surface of the first electrical insulator to a second through-hole in a second surface of the first electrical insulator;  
a second electrical insulator having a first surface connected to the second surface of the first electrical insulator and a second surface of the second electrical insulator connected to a first surface of the anode, the second electrical insulator having a second transverse cavity extending from a third through-hole in the first surface of the second electrical insulator to a fourth through-hole in the second surface of the second electrical insulator; and  
a gap formed in at least one of the first transverse cavity adjacent the second through-hole and the second transverse cavity adjacent the third through hole.

11. The lamp as set forth in claim 10 wherein the gap is spaced in from the first and second through-holes in the first electrical insulator, or from the third and fourth through-holes in the second electrical insulator.

12. The lamp as set forth in claim 10 wherein the gap extends substantially around the first transverse cavity or the second transverse cavity.

5 13. The lamp as set forth in claim 10 wherein a portion of the gap is in both the first and second transverse cavity.

10 14. The lamp as set forth in claim 10 wherein the anode is connected to a radiator.

15 15. The lamp as set forth in claim 10 wherein the cathode is substantially coated with an electron emitting material.

16 16. The lamp as set forth in claim 10 wherein the electrical insulator comprises a ceramic material.

17 17. The lamp as set forth in claim 10 further comprising a cathode shield substantially covering the cathode, the cathode shield connected to a light emitting assembly at a window shield portion and made of a Nickel material.

18 18. The lamp as set forth in claim 10 further comprising an anode shield substantially covering the anode, the anode shield connected to a light emitting assembly at a support bracket portion and made of a Nickel material.

19 19. The lamp as set forth in claim 10 further comprising a support member being interposed between the first electrical insulator and the second electrical insulator.

20 20. The lamp as set forth in claim 10 further comprising at least one protrusion being interposed in the gap between the first electrical insulator and the second electrical insulator at a location having a low potential for

accumulating conductive materials, the at least one protrusion connected to the first electrical insulator, the second electrical insulator or a support plate portion of a light emitting assembly.

- 5                    21.    A light emitting assembly comprising:  
                         an electrical insulator;  
                         a transverse cavity in the electrical insulator, the transverse  
cavity extending from a first through-hole in a first surface of the electrical  
insulator to a second through-hole in a second surface of the electrical insulator;  
10    and  
                         a gap in the transverse cavity of the electrical insulator.
22.    The assembly as set forth in claim 21 wherein the gap is  
located adjacent the second through-hole in the electrical insulator.
- 15                    23.    The assembly as set forth in claim 21 wherein the gap is  
spaced in from the first and second through-holes in the electrical insulator.
24.    The assembly as set forth in claim 21 wherein the gap  
20    extends substantially around the transverse cavity.
25.    The assembly as set forth in claim 21 wherein the electrical  
insulator comprises a ceramic material.
- 25                    26.    A light emitting assembly comprising:  
                         a first electrical insulator;  
                         a second electrical insulator;  
                         a first transverse cavity in the first electrical insulator, the  
first transverse cavity extending from a first through-hole in a first surface of the  
first electrical insulator to a second through-hole in a second surface of the first  
30    electrical insulator;  
                         a second transverse cavity in the second electrical insulator,  
the second transverse cavity extending from a third through-hole in the first

surface of the second electrical insulator to a fourth through-hole in a second surface of the second electrical insulator; and

a gap formed in at least one of the first transverse cavity adjacent the second through-hole and the second transverse cavity adjacent the third through hole.

27. The assembly as set forth in claim 26 wherein the gap is spaced in from the first and second through-holes in the first electrical insulator, or from the third and fourth through-holes in the second electrical insulator.

28. The assembly as set forth in claim 26 wherein the gap extends substantially around the first transverse cavity or the second transverse cavity.

29. The assembly as set forth in claim 26 wherein a portion of the gap is in both the first and second transverse cavity.

30. The assembly as set forth in claim 26 wherein the electrical insulator comprises a ceramic material.

31. The assembly as set forth in claim 26 further comprising a support member being interposed between the first electrical insulator and the second electrical insulator.

32. The assembly as set forth in claim 26 further comprising at least one protrusion being interposed in the gap between the first electrical insulator and the second electrical insulator at a location having a low potential for accumulating conductive materials, the at least one protrusion connected to the first electrical insulator, the second electrical insulator or a support plate portion.

33. A method of manufacturing a light emitting assembly, the method comprising:

forming a transverse cavity in an electrical insulator from a first through-hole in a first surface of the electrical insulator to a second through-hole in a second surface of the electrical insulator; and

forming a gap in the transverse cavity of the electrical  
5 insulator.

34. The method as set forth in claim 33 wherein the forming a gap further comprises locating the gap adjacent the second through-hole in the electrical insulator.  
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35. The method as set forth in claim 33 wherein the forming a gap further comprises spacing the gap in from the first and second through-holes in the electrical insulator.

36. The method as set forth in claim 33 wherein the forming a gap further comprises extending the gap substantially around the transverse cavity.  
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37. The method as set forth in claim 33 further comprising electrically isolating an anode from a baffle using the electrical insulator.  
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38. The method as set forth in claim 33 further comprising using a ceramic material to form the electrical insulator.

39. A method of manufacturing light emitting assembly, the method comprising:  
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forming a first transverse cavity from a first through-hole in a first surface of a first electrical insulator to a second through-hole in a second surface of the first electrical insulator;

forming a second transverse cavity from a third through-hole in the first surface of a second electrical insulator to a fourth through-hole in a second surface of the second electrical insulator; and  
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forming a gap in at least one of the first transverse cavity adjacent the second through-hole and the second transverse cavity adjacent the third through hole.

5                   40.     The method as set forth in claim 39 wherein the forming a gap further comprises spacing the gap in from the first and second through-holes in the first electrical insulator, or from the third and fourth through-holes in the second electrical insulator.

10                   41.     The method as set forth in claim 39 wherein the forming a gap further comprises extending the gap substantially around the first transverse cavity or the second transverse cavity.

15                   42.     The method as set forth in claim 39 further comprising interposing a support member between the first electrical insulator and the second electrical insulator.

20                   43.     The method as set forth in claim 39 further comprising using a ceramic material to form the first electrical insulator and the second electrical insulator.

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